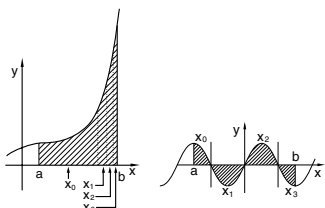




the integral values during minute shifting of the integral range and for periodic functions, etc., where positive and negative integral values exist depending on the interval.



For the former case, divide integral intervals as small as possible. For the latter case, separate the positive and negative values. Following these tips will allow results of calculations with greater accuracy and will also shorten the calculation time.

**Random Function**

The Random function has four settings for use in the normal, statistics, matrix and list modes. (This function cannot be selected while using the N-Base function.) To generate further random numbers in succession, press **ENT**. Press **ON/C** to exit.

- The generated pseudo-random number series is stored in memory Y. Each random number is based on a number series.

**[Random Numbers]**

A pseudo-random number, with three significant digits from 0 up to 0.999, can be generated by pressing **(2ndF) (RANDOM) (0) (ENT)**.

**[Random Dice]**

To simulate a die-rolling, a random integer between 1 and 6 can be generated by pressing **(2ndF) (RANDOM) (1) (ENT)**.

**[Random Coin]**

To simulate a coin flip, 0 (head) or 1 (tail) can be randomly generated by pressing **(2ndF) (RANDOM) (2) (ENT)**.

**[Random Integer]**

An integer between 0 and 99 can be generated randomly by pressing **(2ndF) (RANDOM) (3) (ENT)**.

**Angular Unit Conversions**

Each time **(2ndF) (DRG)** are pressed, the angular unit changes in sequence.

**Memory Calculations**

Mode	ANS	M, F1-F4	A-F, X, Y
NORMAL	○	○	○
STAT	○	×	×
EQN	×	×	×
CPLX	○	○	○
MAT	○	×	×
LIST	○	×	○

○ : Available      × : Unavailable

**[Temporary memories (A-F, X and Y)]**

Press **(STO)** and a variable key to store a value in memory. Press **(RCL)** and a variable key to recall a value from the memory. To place a variable in an equation, press **(ALPHA)** and a variable key.

**[Independent memory (M)]**

In addition to all the features of temporary memories, a value can be added to or subtracted from an existing memory value. Press **(ON/C) (STO) (M)** to clear the independent memory (M).

**[Last answer memory (ANS)]**

The calculation result obtained by pressing **=** or any other calculation ending instruction is automatically stored in the last answer memory. A Matrix/List format result is not stored.

**[Formula memories (F1-F4)]**

Formulas up to 256 characters in total can be stored in F1 - F4. (Functions such as sin, etc., will be counted as one letter.) Storing a new equation in each memory will automatically replace the existing equation.

- Note:
- Calculation results from the functions indicated below are automatically stored in memories X or Y replacing existing values.
    - Random function ..... Y memory
    - $\rightarrow r\theta$ ,  $\rightarrow xy$  ..... X memory (r or x), Y memory ( $\theta$  or y)
  - Use of **(RCL)** or **(ALPHA)** will recall the value stored in memory using up to 14 digits.

**Chain Calculations**

- The previous calculation result can be used in the subsequent calculation. However, it cannot be recalled after entering multiple instructions or when the calculation result is in Matrix/List format.
- When using postfix functions ( $\sqrt{\quad}$ , sin, etc.), a chain calculation is possible even if the previous calculation result is cleared by the use of the **(ON/C)** key.

**Fraction Calculations**

Arithmetic operations and memory calculations can be performed using fractions, and conversion between a decimal number and a fraction.

- If the number of digits to be displayed is greater than 10, the number is converted to and displayed as a decimal number.

**Binary, Pentad, Octal, Decimal, and Hexadecimal**

**Operations (N-Base)**

Conversions can be performed between N-base numbers. The four basic arithmetic operations, calculations with parentheses and memory calculations can also be performed, along with the logical operations AND, OR, NOT, NEG, XOR and XNOR on binary, pentad, octal and hexadecimal numbers.

Conversion to each system is performed by the following keys: **(2ndF) (BIN)** ("b" appears.), **(2ndF) (PEN)** ("P" appears.), **(2ndF) (OCT)** ("o" appears.), **(2ndF) (HEX)** ("H" appears.), **(2ndF) (DEC)** ("b", "P", "o" and "H" disappear.)

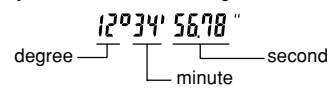
Note: The hexadecimal numbers A - F are entered by pressing **(ONST)**, **(y<sup>x</sup>)**, **(x<sup>2</sup>)**, **(x<sup>3</sup>)**, **(log)**, and **(ln)**, and displayed as follows:

$A \rightarrow \beta, B \rightarrow b, C \rightarrow \zeta, D \rightarrow d, E \rightarrow \xi, F \rightarrow f$

In the binary, pentad, octal, and hexadecimal systems, fractional parts cannot be entered. When a decimal number having a fractional part is converted into a binary, pentad, octal, or hexadecimal number, the fractional part will be truncated. Likewise, when the result of a binary, pentad, octal, or hexadecimal calculation includes a fractional part, the fractional part will be truncated. In the binary, pentad, octal, and hexadecimal systems, negative numbers are displayed as a complement.

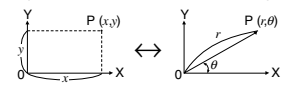
**Time, Decimal and Sexagesimal Calculations**

Conversion between decimal and sexagesimal numbers can be performed, and, while using sexagesimal numbers, conversion to seconds and minutes notation. The four basic arithmetic operations and memory calculations can be performed using the sexagesimal system. Notation for sexagesimal is as follows:



**Coordinate Conversions**

- Before performing a calculation, select the angular unit.



Rectangular coord.      Polar coord.

- The calculation result is automatically stored in memories X and Y.
  - Value of r or x: X memory
  - Value of  $\theta$  or y: Y memory

**Calculations Using Physical Constants**

See the quick reference card and the English manual reverse side. A constant is recalled by pressing **(ONST)** followed by the number of the physical constant designated by a 2-digit number. The recalled constant appears in the display mode selected with the designated number of decimal places.

Physical constants can be recalled in the normal mode (when not set to binary, pentad, octal, or hexadecimal), statistics mode, equation mode, matrix mode and list mode.

Note: Physical constants and metric conversions are based either on the 2002 CODATA recommended values or 1995 Edition of the "Guide for the Use of the International System of Units (SI)" released by NIST (National Institute of Standards and Technology) or on ISO specifications.

No.	Constant	No.	Constant
01	Speed of light in vacuum	28	Avogadro constant
02	Newtonian constant of gravitation	29	Molar volume of ideal gas (273.15 K, 101.325 kPa)
03	Standard acceleration of gravity	30	Molar gas constant
04	Electron mass	31	Faraday constant
05	Proton mass	32	Von Klitzing constant
06	Neutron mass	33	Electron charge to mass quotient
07	Muon mass	34	Quantum of circulation
08	Atomic mass unit-kilogram relationship	35	Proton gyromagnetic ratio
09	Elementary charge	36	Josephson constant
10	Planck constant	37	Electron volt
11	Boltzmann constant	38	Celsius Temperature
12	Magnetic constant	39	Astronomical unit
13	Electric constant	40	Parsec
14	Classical electron radius	41	Molar mass of carbon-12
15	Fine-structure constant	42	Planck constant over 2 pi
16	Bohr radius	43	Hartree energy
17	Rydberg constant	44	Conductance quantum
18	Magnetic flux quantum	45	Inverse fine-structure constant
19	Bohr magneton	46	Proton-electron mass ratio
20	Electron magnetic moment	47	Molar mass constant
21	Nuclear magneton	48	Neutron Compton wavelength
22	Proton magnetic moment	49	First radiation constant
23	Neutron magnetic moment	50	Second radiation constant
24	Muon magnetic moment	51	Characteristic impedance of vacuum
25	Compton wavelength	52	Standard atmosphere
26	Proton Compton wavelength		
27	Stefan-Boltzmann constant		

**Metric Conversions**

See the quick reference card and the English manual reverse side. Unit conversions can be performed in the normal mode (when not set to binary, pentad, octal, or hexadecimal), statistics mode, equation mode, matrix mode and list mode.

No.	Remarks	No.	Remarks
1	in : inch	23	fl oz(US) : fluid ounce(US)
2	cm : centimeter	24	mℓ : milliliter
3	ft : foot	25	fl oz(UK) : fluid ounce(UK)
4	m : meter	26	mℓ : milliliter
5	yd : yard	27	J : Joule
6	m : meter	28	cal : calorie
7	mile : mile	29	J : Joule
8	km : kilometer	30	cal <sub>15</sub> : Calorie (15°C)
9	n mile : nautical mile	31	J : Joule
10	m : meter	32	cal <sub>IT</sub> : I.T. calorie
11	acre : acre	33	hp : horsepower
12	m <sup>2</sup> : square meter	34	W : watt
13	oz : ounce	35	ps : French horsepower
14	g : gram	36	W : watt
15	lb : pound	37	
16	kg : kilogram	38	Pa : Pascal
17	°F : Degree Fahrenheit	39	atm : atmosphere
18	°C : Degree Celsius	40	Pa : Pascal
19	gal (US) : gallon (US)	41	(1 mmHg = 1 Torr)
20	ℓ : liter	42	Pa : Pascal
21	gal (UK) : gallon (UK)	43	
22	ℓ : liter	44	J : Joule



- the value of each item ('SIZE', and then each element, e.g. 'LIST1') and press **[DATA]** after each. After entering all items, press **[ON/C]**, then press **[MATH]** **[2]** and specify L1-4 to save the data.
- To edit data saved in L1-4, press **[MATH]** **[1]** and specify L1-4 to recall the data to the list edit buffer. After editing, press **[ON/C]**, then press **[MATH]** **[2]** and specify L1-4 to save the data.
- Before performing calculations, press **[ON/C]** to close the list edit buffer.
- When results of calculations are in the list format, the list edit buffer with those results will be displayed. (At this time, you cannot return to the equation.) To save the result in L1-4, press **[ON/C]**, then press **[MATH]** **[2]** and specify L1-4.
- Since there is only one list edit buffer, the previous data will be overwritten by the new calculation.
- In addition to the 4 arithmetic functions,  $x^3$ ,  $x^2$ , and  $x^{-1}$ , the following commands are available:

sortA list name	Sorts list in ascending order.
sortD list name	Sorts list in descending order.
dim(list name,size)	Returns a list with size changed as specified.
fill(value,size)	Enter the specified value for all items.
cumul list name	Sequentially cumulates each item in the list.
df_list list name	Returns a new list using the difference between adjacent items in the list.
aug(list name,list name)	Returns a list appending the specified lists.
min list name	Returns the minimum value in the list.
max list name	Returns the maximum value in the list.
mean list name	Returns the mean value of items in the list.
med list name	Returns the median value of items in the list.
sum list name	Returns the sum of items in the list.
prod list name	Returns the multiplication of items in the list.
stdDv list name	Returns the standard deviation of the list.
vari list name	Returns the variance of the list.
o_prod(list name,list name)	Returns the outer product of 2 lists (vectors).
i_prod(list name,list name)	Returns the inner product of 2 lists (vectors).
abs list name	Returns the absolute value of the list (vector).
list→mat (MATH) <b>[5]</b>	Creates matrices with left column data from each list. (L1→matA, L2→matB, L3→matC, L4→matD) Mode changes from list mode to matrix mode.
list→matA (MATH) <b>[6]</b>	Creates a matrix with column data from each list. (L1, L2, L3, L4→matA) Mode changes from list mode to matrix mode.

## ERROR AND CALCULATION RANGES

### Errors

An error will occur if an operation exceeds the calculation ranges, or if a mathematically illegal operation is attempted. When an error occurs, pressing **[◀]** (or **[▶]**) automatically moves the cursor back to the place in the equation where the error occurred. Edit the equation or press **[ON/C]** to clear the equation.

### Error Codes and Error Types

Syntax error (Error 1):

- An attempt was made to perform an invalid operation.  
EX. 2 **[2ndF]** **[→r]**

Calculation error (Error 2):

- The absolute value of an intermediate or final calculation result equals or exceeds  $10^{100}$ .
- An attempt was made to divide by 0 (or an intermediate calculation resulted in zero).
- The calculation ranges were exceeded while performing calculations.

Depth error (Error 3):

- The available number of buffers was exceeded. (There are 10 buffers\* for numeric values and 24 buffers for calculation instructions in the normal mode).  
\*5 buffers in other modes, and 1 buffer for Matrix/List data.
- Data items exceeded 100 in the statistics mode.

Equation too long (Error 4):

- The equation exceeded its maximum input buffer (142 characters). An equation must be shorter than 142 characters.

Equation recall error (Error 5):

- The stored equation contains a function not available in the mode used to recall the equation. For example, if a numerical value with numbers other than 0 and 1 is stored as a decimal, etc., it cannot be recalled when the calculator is set to binary.

Memory over error (Error 6):

- Equation exceeded the formula memory buffer (256 characters in total in F1 - F4).

Invalid error (Error 7):

- Matrix/list definition error or entering an invalid value.

Dimension error (Error 8):

- Matrix/list dimensions inconsistent while calculation.

Invalid DIM error (Error 9):

- Size of matrix/list exceeds calculation range.

No define error (Error 10):

- Undefined matrix/list used in calculation.

## Calculation Ranges

[30]

- Within the ranges specified, this calculator is accurate to  $\pm 1$  of the least significant digit of the mantissa. However, a calculation error increases in continuous calculations due to accumulation of each calculation error. (This is the same for  $y^x$ ,  $x\sqrt{\quad}$ ,  $n!$ ,  $e^x$ ,  $\ln$ , Matrix/List calculations, etc., where continuous calculations are performed internally.) Additionally, a calculation error will accumulate and become larger in the vicinity of inflection points and singular points of functions.

Calculation ranges

$$\pm 10^{-99} \sim \pm 9.999999999 \times 10^{99} \text{ and } 0.$$

If the absolute value of an entry or a final or intermediate result of a calculation is less than  $10^{-99}$ , the value is considered to be 0 in calculations and in the display.

## BATTERY REPLACEMENT

### Notes on Battery Replacement

Improper handling of batteries can cause electrolyte leakage or explosion. Be sure to observe the following handling rules:

- Replace both batteries at the same time.
- Do not mix new and old batteries.
- Make sure the new batteries are the correct type.
- When installing, orient each battery properly as indicated in the calculator.
- Batteries are factory-installed before shipment, and may be exhausted before they reach the service life stated in the specifications.

### Notes on erasure of memory contents

When the battery is replaced, the memory contents are erased. Erasure can also occur if the calculator is defective or when it is repaired. Make a note of all important memory contents in case accidental erasure occurs.

### When to Replace the Batteries

If the display has poor contrast or nothing appears on the display even when **[ON/C]** is pressed in dim lighting, it is time to replace the batteries.

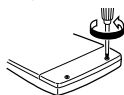
### Cautions

- Fluid from a leaking battery accidentally entering an eye could result in serious injury. Should this occur, wash with clean water and immediately consult a doctor.
- Should fluid from a leaking battery come in contact with your skin or clothes, immediately wash with clean water.
- If the product is not to be used for some time, to avoid damage to the unit from leaking batteries, remove them and store in a safe place.
- Do not leave exhausted batteries inside the product.
- Do not fit partially used batteries, and be sure not to mix batteries of different types.
- Keep batteries out of the reach of children.
- Exhausted batteries left in the calculator may leak and damage the calculator.
- Explosion risk may be caused by incorrect handling.
- Do not throw batteries into a fire as they may explode.

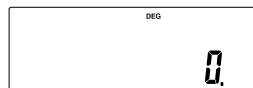
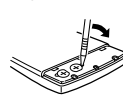
### Replacement Procedure

- Turn the power off by pressing **[2ndF]** **[OFF]**.
  - Remove the two screws. (Fig. 1)
  - Slide the battery cover slightly and lift it to remove.
  - Remove the used batteries by prying them out with a ball-point pen or other similar pointed device. (Fig. 2)
  - Install two new batteries. Make sure the "+" side is facing up.
  - Replace the cover and screws.
  - Press the RESET switch (on the back).
- Make sure that the display appears as shown below. If the display does not appear as shown, remove the batteries, re-install them and check the display once again.

(Fig. 1)



(Fig. 2)



### Automatic Power Off Function

This calculator will turn itself off to save battery power if no key is pressed for approximately 10 minutes.

## SPECIFICATIONS

Calculations:	Scientific calculations, complex number calculations, equation solvers, statistical calculations, etc.
Internal calculations:	Mantissas of up to 14 digits
Pending operations:	24 calculations 10 numeric values in the normal mode (5 numeric values in other modes, and 1 numeric value for Matrix/List data.)
Power source:	Built-in solar cells 3 V $\approx$ (DC): Backup batteries (Alkaline batteries (LR44 or equivalent) $\times$ 2)
Operating temperature:	0°C - 40°C (32°F - 104°F)
External dimensions:	79.6 mm (W) $\times$ 154.5 mm (D) $\times$ 13.2 mm (H) 3-1/8" (W) $\times$ 6-3/32" (D) $\times$ 17/32" (H)
Weight:	Approx. 97g (0.22 lb) (Including batteries)
Accessories:	Batteries $\times$ 2 (installed), operation manual, quick reference card and hard case

## FOR MORE INFORMATION ABOUT SCIENTIFIC CALCULATOR

Visit our Web site.

<http://sharp-world.com/calculator/>

**SHARP**  
SHARP CORPORATION

EL-506W EL-546W

CALCULATION EXAMPLES ANWENDUNGSBEISPIELE EXEMPLES DE CALCUL EJEMPLOS DE CÁLCULO ESEMPLI DI CALCOLO REKENVOORBEELDEN PÉLDASZÁMÍTÁSOK PŘÍKLADY VÝPOČTŮ RÄKNEEEXEMPEL LASKENTAESIMERKKEJÄ ПРИМЕРЫ ВЫЧИСЛЕНИЙ UDREGNINGSEKSEMPLER

ตัวอย่างการคำนวณ

نماذج للحسابات

计算例子

CONTOH-CONTOH PENGHITUNGAN CONTOH-CONTOH PERHITUNGAN CÁC VÍ DỤ PHÉP TÍNH

[1] ▲ ▼

Table with 3 columns: Expression, Calculator Input, Result. Includes examples like 3(5+2)=, 2(3x5+2)=, 3(3x5+3x2)=.

[2] [SETUP]

Table showing calculator setup for various modes: [NORM1], [TAB 2], [SCI], [ENG], [NORM1].

[3] + - × ÷ ( ) +/- Exp

Table with 3 columns: Expression, Calculator Input, Result. Includes examples like 45+285÷3=, 18+6, 15-8=, 42x(-5)+120=, (5x10^3)÷(4x10^-3)=.

[4]

Table with 3 columns: Expression, Calculator Input, Result. Includes examples like 34+57=, 45±57=, 68x25=, 68x40=.

[5] sin cos tan sin^-1 cos^-1 tan^-1 π hyp arc hyp

Table with 3 columns: Expression, Calculator Input, Result. Includes trigonometric examples like sin 60°, cos π/4 [rad]=, tan^-1=[g], (cosh 1.5 + sinh 1.5)^2=.

Table with 3 columns: Expression, Calculator Input, Result. Includes examples like tanh^-1(5/7)=, ln 20=, log 50=, e^3=, 10^1.7=, 1/6 + 1/7=, 8^-2 - 3^4 x 5^2=, (12^3)^(1/4)=, 8^3=, sqrt(49)-sqrt(81)=, cube root of 27=, 4!=, 10P3=, 5C2=, 500x25%=, 120÷400=%, 500+(500x25%)=, 400-(400x30%)=.

- The range of the results of inverse trigonometric functions
Der Ergebnisbereich für inverse trigonometrische Funktionen
Plage des résultats des fonctions trigonométriques inverses
El rango de los resultados de funciones trigonométricas inversas
Gama dos resultados das trigonométricas inversas
La gamma dei risultati di funzioni trigonometriche inverse
Het bereik van de resultaten van inverse trigonometrie
Az inverz trigonometriai funkciók eredmény-tartománya
Rozsah výsledků inverzních trigonometrických funkcí
Omfång för resultaten av omvända trigonometriska funktioner
Käänteisten trigonometrysten funktioiden tulosten alue
Диапазон результатов обратных тригонометрических функций
Område for resultater af omvendte trigonometriske funktioner
พื้นที่ของผลลัพธ์ของฟังก์ชันตรีโกณมิติกลับด้าน
نطاق نتائج الدول المتكسبة المعكوسة
反三角函数计算结果的范围
Julat hasil fungsi trigonometri songsang
Kisaran hasil fungsi trigonometri inversi
Giới hạn của các kết quả của các hàm số lượng giác nghịch đảo

Table with 3 columns: Mode (DEG, RAD, GRAD), Range for theta = sin^-1 x, Range for theta = tan^-1 x, Range for theta = cos^-1 x.

[6] d/dx ∫dx

Table with 3 columns: Expression, Calculator Input, Result. Includes examples like d/dx (x^4 - 0.5x^3 + 6x^2), ∫\_2^8 (x^2 - 5)dx.

[7] [DRG]

Table with 3 columns: Expression, Calculator Input, Result. Includes examples like 90° -> [rad], sin^-1 0.8 = [°].

Table with 3 columns: Expression, Calculator Input, Result. Includes examples like (8) ALPHA RCL STO M+ M- ANS F1 F2 F3 F4, 24÷(8x2)=, (8x2)x5=, \$150x3:M1, +)\$250:M2 =M1+250, -)M2x5% M, \$1=¥110, ¥26,510=¥?, \$2,750=¥?, r=3cm (r->Y), πr^2=?, 24/4+6 = 2.4...(A), 3x(A)+60÷(A)=, πr^2->F1, V=?.

[9]

Table with 3 columns: Expression, Calculator Input, Result. Includes examples like 6+4=ANS, ANS+5, 8x2=ANS, ANS^2, 44+37=ANS, sqrt(ANS)=.

[10] a^b/c d/c

Table with 3 columns: Expression, Calculator Input, Result. Includes examples like 3 1/2 + 4/3 = [a^b/c], ->[a.xxx], ->[d/c], 10^(2/3)=, (7/5)^5=, (1/8)^(1/3)=, sqrt(64/225)=, 2^3/3^4=, 1.2/2.3=, 1°2'3" / 2=, 1x10^3 / 2x10^3=, A=7, 4/A=, 1.25 + 2/5 = [a.xxx], ->[a^b/c], \* 4 r 5 r 6 = 4 5/6.

[11] [BIN] [PEN] [OCT] [HEX] [DEC] [NEG] [NOT] [AND] [OR] [XOR] [XNOR]

Table with 3 columns: Expression, Calculator Input, Result. Includes examples like DEC(25)->BIN, HEX(1AC), ->BIN, ->PEN, ->OCT, ->DEC, BIN(1010-100), x11=, BIN(111)->NEG, HEX(1FF)+, OCT(512)=, HEX(?), 2FEC-, 2C9E=(A), +)2000-, 1901=(B), (C).

1011 AND (ON/C) (2ndF) (BIN) 1011 (AND) 101 (=) 1<sup>b</sup>

5A OR C3 = (HEX) (2ndF) (HEX) 5A (OR) C3 (=) db<sup>H</sup>

NOT 10110 = (2ndF) (BIN) (NOT) 10110 (=) 1111101001<sup>b</sup>  
(BIN)

24 XOR 4 = (OCT) (2ndF) (OCT) 24 (XOR) 4 (=) 20<sup>o</sup>

B3 XNOR (2ndF) (HEX) B3 (XNOR) 2D (=) FFFFFFFF61<sup>H</sup>  
→DEC (2ndF) (DEC) -159.

**[12]** (D'M'S) (←DEG) (MATH) (→sec, →min)

12°39'18.05" (ON/C) 12 (D'M'S) 39 (D'M'S) 18.05 →[10] (2ndF) (←DEG) 12.65501389

123.678→[60] 123.678 (2ndF) (←DEG) 123°40'40.8"

3h30m45s + 6h45m36s = [60] 3 (D'M'S) 30 (D'M'S) 45 (+) 6 (D'M'S) 45 (D'M'S) 36 (=) 10°16'21."

1234°56'12" + 0°0'34.567" = [60] 1234 (D'M'S) 56 (D'M'S) 12 (+) 0 (D'M'S) 0 (D'M'S) 34.567 (=) 1234°56'47."

3h45m - 1.69h = [60] 3 (D'M'S) 45 (-) 1.69 (=) 2°3'36."

sin62°12'24" = [10] (sin) 62 (D'M'S) 12 (D'M'S) 24 (=) 0.884635235

24°→[" ] 24 (D'M'S) (MATH) (2) 86'400.

1500"→[' ] 0 (D'M'S) 0 (D'M'S) 1500 (MATH) (3) 25.

**[13]** (→rθ) (→xy) (→) (←→)

$\begin{cases} x = 6 \\ y = 4 \end{cases} \rightarrow \begin{cases} r = \\ \theta = [^\circ] \end{cases}$  (ON/C) 6 (2ndF) (→) 4 7.211102551  
(2ndF) (→rθ) [r] 33.69006753  
(2ndF) (←→) [θ] 7.211102551  
(2ndF) (←→) [r]

$\begin{cases} r = 14 \\ \theta = 36[^\circ] \end{cases} \rightarrow \begin{cases} x = \\ y = \end{cases}$  14 (2ndF) (→) 36 11.32623792  
(2ndF) (→xy) [x] 8.228993532  
(2ndF) (←→) [y] 11.32623792  
(2ndF) (←→) [x]

**[14]** (CNST)

$V_0 = 15.3\text{m/s}$  (ON/C) 15.3 (X) 10 (+) 2 (2ndF) (X<sup>-1</sup>) (X)  
 $t = 10\text{s}$  (CNST) 03 (X) 10 (X<sup>2</sup>) (=) 643.3325

$V_0 t + \frac{1}{2} g t^2 = ?\text{m}$

**[15]** (CONV)

125yd = ?m (ON/C) 125 (2ndF) (CONV) 5 (=) 114.3

**[16]** (MATH) (k, M, G, T, m, μ, n, p, f)

100m×10k= 100 (MATH) (1) (4) (X) 10 (MATH) (1) (0) (=) 1'000.

**[17]** (MDF) (SETUP)

5÷9=ANS (ON/C) (SETUP) (1) (0) (SETUP) (2) 1  
ANS×9= 5 (÷) 9 (=) 0.6  
[FIX,TAB=1] (X) 9 (=) \*1 5.0

5 ÷ 9 = ? (2ndF) (MDF) 5 (÷) 9 (=) \*2 0.6  
(X) 9 (=) \*2 5.4  
(SETUP) (1) (3)

\*1 5.5555555555555×10<sup>-1</sup>×9  
\*2 0.6×9

**[18]** (MATH) (SOLV)

sin x - 0.5 (ON/C) (sin) (ALPHA) (X) (-) 0.5  
Start = 0 (MATH) (0) (0) (ENT) (ENT) 30.  
Start = 180 (ENT) 180 (ENT) (ENT) 150.

**[19]** (ALGB)

$f(x) = x^3 - 3x^2 + 2$  (MODE) (0)  
(ALPHA) (X) (y<sup>x</sup>) 3 (-) 3 (ALPHA) (X) (X<sup>2</sup>) (+) 2 (2ndF) (ALGB)

$x = -1$  1 (+/-) (ENT) -2.  
 $x = -0.5$  (2ndF) (ALGB) 0.5 (+/-) (ENT) 1.125

$\sqrt{A^2+B^2}$  (2ndF) (√) ( ) (ALPHA) (A) (X<sup>2</sup>) (+)  
(ALPHA) (B) (X<sup>2</sup>) ( ) (2ndF) (ALGB)

A = 2, B = 3 2 (ENT) 3 (ENT) 3.605551275  
A = 2, B = 5 (2ndF) (ALGB) (ENT) 5 (ENT) 5.385164807

**[20]** (DATA) ((x,y)) (X̄) (Sx) (σx) (n) (Σx) (Σx<sup>2</sup>) (ȳ)  
(Sy) (σy) (Σy) (Σy<sup>2</sup>) (Σxy) (r) (a) (b) (c)  
(X') (y') (←→) (MATH) (→t, P, Q, R)

DATA

95 (MODE) (1) (0) 0.  
80 (95) (DATA) 1.  
80 (DATA) 2.  
75 (DATA) 3.  
75 ((x,y)) 3 (DATA) 4.  
75 (DATA) 5.  
50

$\bar{x} =$  (RCL) (X̄) 75.71428571  
 $\sigma_x =$  (RCL) (σx) 12.37179148  
 $n =$  (RCL) (n) 7.  
 $\Sigma x =$  (RCL) (Σx) 530.  
 $\Sigma x^2 =$  (RCL) (Σx<sup>2</sup>) 41'200.  
 $s_x =$  (RCL) (Sx) 13.3630621  
 $s_x^2 =$  (X<sup>2</sup>) (=) 178.5714286

$\frac{(95-\bar{x})}{s_x} \times 10 + 50 =$  ( ) 95 (-) (ALPHA) (X̄) ( ) (÷) (ALPHA) (Sx) (X) 10 (+) 50 (=) 64.43210706

$x = 60 \rightarrow P(t) ?$  (MATH) (1) 60 (MATH) (0) ( ) (=) 0.102012  
 $t = -0.5 \rightarrow R(t) ?$  (MATH) (3) 0.5 (+/-) ( ) (=) 0.691463

x	y	(MODE) (1) (1)	
2	5	2 ((x,y)) 5 (DATA)	1.
2	5	(DATA)	2.
12	24	12 ((x,y)) 24 (DATA)	3.
21	40	21 ((x,y)) 40 ((x,y)) 3 (DATA)	4.
21	40	15 ((x,y)) 25 (DATA)	5.
21	40	(RCL) (a)	1.050261097
15	25	(RCL) (b)	1.826044386
		(RCL) (r)	0.995176343
		(RCL) (Sx)	8.541216597
		(RCL) (Sy)	15.67223812

$x=3 \rightarrow y'=?$  3 (2ndF) (y') 6.528394256  
 $y=46 \rightarrow x'=?$  46 (2ndF) (X') 24.61590706

x	y	(MODE) (1) (2)	
12	41	12 ((x,y)) 41 (DATA)	0.
8	13	8 ((x,y)) 13 (DATA)	1.
5	2	5 ((x,y)) 2 (DATA)	2.
23	200	23 ((x,y)) 200 (DATA)	3.
15	71	15 ((x,y)) 71 (DATA)	4.
		(RCL) (a)	5.357506761
		(RCL) (b)	-3.120289663
		(RCL) (c)	0.503334057

$x=10 \rightarrow y'=?$  10 (2ndF) (y') 24.4880159  
 $y=22 \rightarrow x'=?$  22 (2ndF) (X') 9.63201409  
(2ndF) (←→) -3.432772026  
(2ndF) (←→) 9.63201409

**[21]** (DATA) (▲) (▼)

DATA

30 (MODE) (1) (0) 0.  
40 30 (DATA) 1.  
40 40 ((x,y)) 2 (DATA) 2.  
50 50 (DATA) 3.

↓

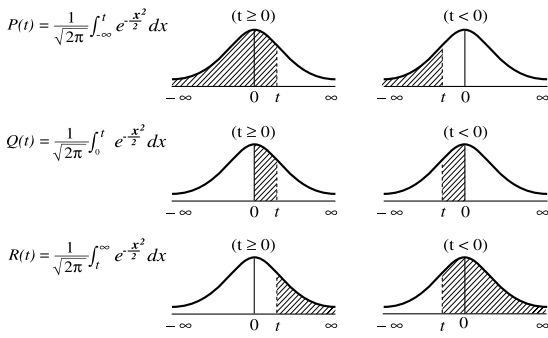
DATA

30 (▼) (▼) (▼) X2 = 45.  
45 45 ((x,y)) 3 (DATA) N2 = 3.  
45 (▼)  
60 (▼) 60 (DATA) X3 = 60.

**[22]**  $\bar{x} = \frac{\Sigma x}{n}$   $\sigma_x = \sqrt{\frac{\Sigma x^2 - n\bar{x}^2}{n}}$   
 $s_x = \sqrt{\frac{\Sigma x^2 - n\bar{x}^2}{n-1}}$   $\Sigma x = x_1 + x_2 + \dots + x_n$   
 $\Sigma x^2 = x_1^2 + x_2^2 + \dots + x_n^2$

$\bar{y} = \frac{\Sigma y}{n}$   $\sigma_y = \sqrt{\frac{\Sigma y^2 - n\bar{y}^2}{n}}$   
 $s_y = \sqrt{\frac{\Sigma y^2 - n\bar{y}^2}{n-1}}$   $\Sigma xy = x_1y_1 + x_2y_2 + \dots + x_ny_n$   
 $\Sigma y = y_1 + y_2 + \dots + y_n$   
 $\Sigma y^2 = y_1^2 + y_2^2 + \dots + y_n^2$

[23]



$t = \frac{x - \bar{x}}{s\sqrt{x}}$

Standardization conversion formula  
 Standard Umrechnungsformel  
 Formule de conversion de standardisation  
 Fórmula de conversión de estandarización  
 Fórmula de conversão padronizada  
 Formula di conversione della standardizzazione  
 Standaardisering omzettingformule  
 Standard átváltási képlet  
 Vzorec pro přepoččet rozdělení  
 Omvandlingsformel för standardisering  
 Normituksen konversiokaava  
 Формула стандартизованного преобразования  
 Omregningsformel for standardisering  
 สูตรแปลงค่ามาตรฐาน  
 صيغة التحويل لتوحيد المقاييس  
 标准化的转换公式  
 Rumus penukaran pemaiwaan  
 Rumus konversi standarisasi  
 Công thức biến đổi chuẩn hóa

[24] (MODE) (2-VLE)

$\begin{vmatrix} a_1x + b_1y = c_1 \\ a_2x + b_2y = c_2 \end{vmatrix} \quad |D| = \begin{vmatrix} a_1 & b_1 \\ a_2 & b_2 \end{vmatrix}$

$\begin{cases} 2x + 3y = 4 \\ 5x + 6y = 7 \end{cases}$

$x = ?$       [ENT] [x]      **-1.**  
 $y = ?$       [ENT] [y]      **2.**  
 $\det(D) = ?$       [ENT] [det(D)]      **-3.**

[25] (MODE) (3-VLE)

$\begin{vmatrix} a_1x + b_1y + c_1z = d_1 \\ a_2x + b_2y + c_2z = d_2 \\ a_3x + b_3y + c_3z = d_3 \end{vmatrix} \quad |D| = \begin{vmatrix} a_1 & b_1 & c_1 \\ a_2 & b_2 & c_2 \\ a_3 & b_3 & c_3 \end{vmatrix}$

$\begin{cases} x + y - z = 9 \\ 6x + 6y - z = 17 \\ 14x - 7y + 2z = 42 \end{cases}$

$x = ?$       [ENT] [x]      **3.238095238**  
 $y = ?$       [ENT] [y]      **-1.638095238**  
 $z = ?$       [ENT] [z]      **-7.4**  
 $\det(D) = ?$       [ENT] [det(D)]      **105.**

[26] (MODE) (QUAD, CUBIC)

$3x^2 + 4x - 95 = 0$

$x1 = ?$       [ENT]      **5.**  
 $x2 = ?$       [ENT]      **-6.333333333**  
 [2ndF] [ENT]

$5x^3 + 4x^2 + 3x + 7 = 0$

$x1 = ?$       [ENT]      **-1.233600307**  
 $x2 = ?$       [ENT]      **0.216800153**  
 [2ndF] [←→]      **+ 1.043018296;**  
 $x3 = ?$       [ENT]      **0.216800153**  
 [2ndF] [←→]      **- 1.043018296;**

[27] (MODE) (CPLX)

$(12-6i) + (7+15i) - (11+4i) =$       [12] [-] [6] [i] [+] [7] [+] [15] [i] [-] [11] [+] [4] [i] [)] [=] [x]      **8.**  
 [2ndF] [←→] [y]      **-5.i**  
 [2ndF] [←→] [x]      **8.**

$6 \times (7-9i) \times (-5+8i) =$       [6] [x] [(] [7] [-] [9] [i] [)] [x] [(] [5] [+/-] [+] [8] [i] [)] [=] [x]      **222.**  
 [2ndF] [←→] [y]      **+ 606.i**

$16 \times (\sin 30^\circ + i \cos 30^\circ) \div (\sin 60^\circ + i \cos 60^\circ) =$       [16] [x] [(] [sin] [30] [+] [i] [cos] [30] [)] [÷] [(] [sin] [60] [+] [i] [cos] [60] [)] [=] [x]      **13.85640646**  
 [2ndF] [←→] [y]      **+ 8.i**

$r1 = 8, \theta1 = 70^\circ$   
 $r2 = 12, \theta2 = 25^\circ$

$r = ?, \theta = ?^\circ$

$(1+i)$       [2ndF] [←→] [y] [1] [+] [i] [=]      **1.**  
 ↓      [2ndF] [←→] [rθ] [r]      **1.414213562**  
 $r = ?, \theta = ?^\circ$       [2ndF] [←→] [θ]      **< 45.**

$(2-3i)^2 =$       [2ndF] [←→] [xy] [(] [2] [-] [3] [i] [)] [x^2]      **-5.**  
 [=] [x]      **-12.i**  
 [2ndF] [←→] [y]

$\frac{1}{1+i} =$       [(] [1] [+] [i] [)] [2ndF] [x^-1] [=] [x]      **0.5**  
 [2ndF] [←→] [y]      **-0.5i**

CONJ(5+2i) =      [MATH] [0] [(] [5] [+] [2] [i] [)] [=] [x]      **5.**  
 [2ndF] [←→] [y]      **-2.i**

[28] (MODE) (MAT)

MODE [4]

$\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix} \rightarrow \text{matA}$       [2] [DATA] [2] [DATA] [1] [DATA] [2] [DATA]

$\begin{bmatrix} 3 & 1 \\ 2 & 6 \end{bmatrix} \rightarrow \text{matB}$       [3] [DATA] [4] [DATA] [2] [DATA] [6] [DATA]

$\text{matA} \times \text{matB} = \begin{bmatrix} 7 & 13 \\ 17 & 27 \end{bmatrix}$       [ON/C] [MATH] [0] [0] [0] [x] [MATH] [0] [1] [=]

$\text{matA}^{-1} = \begin{bmatrix} -2 & 1 \\ 1.5 & -0.5 \end{bmatrix}$       [ON/C] [MATH] [0] [0] [0] [2ndF] [x^-1] [=]

$\text{dim}(\text{matA}, 3, 3) = \begin{bmatrix} 1 & 2 & 0 \\ 3 & 4 & 0 \\ 0 & 0 & 0 \end{bmatrix}$       [ON/C] [MATH] [3] [0] [0] [MATH] [0] [0] [0] [2ndF] [→] [3] [2ndF] [→] [3] [)] [=]

$\text{fill}(5, 3, 3) = \begin{bmatrix} 5 & 5 & 5 \\ 5 & 5 & 5 \\ 5 & 5 & 5 \end{bmatrix}$       [ON/C] [MATH] [3] [1] [5] [2ndF] [→] [3] [2ndF] [→] [3] [)] [=]

$\text{cumul matA} = \begin{bmatrix} 1 & 2 \\ 4 & 6 \end{bmatrix}$       [ON/C] [MATH] [3] [2] [MATH] [0] [0] [0] [=]

$\text{aug}(\text{matA}, \text{matB}) = \begin{bmatrix} 1 & 2 & 3 & 1 \\ 3 & 4 & 2 & 6 \end{bmatrix}$       [ON/C] [MATH] [3] [3] [MATH] [0] [0] [0] [2ndF] [→] [MATH] [0] [1] [)] [=]

$\text{identity } 3 = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$       [ON/C] [MATH] [3] [4] [3] [=]

$\text{rnd\_mat}(2, 3)$       [ON/C] [MATH] [3] [5] [2] [2ndF] [→] [3] [)] [=]

$\det \text{ matA} = -2$       [ON/C] [MATH] [4] [0] [MATH] [0] [0] [0] [=]

$\text{trans matB} = \begin{bmatrix} 3 & 2 \\ 1 & 6 \end{bmatrix}$       [ON/C] [MATH] [4] [1] [MATH] [0] [1] [=]

$\text{mat} \rightarrow \text{list}$       L1: {1 3}      L2: {3 2}      [ON/C] [MATH] [5]

[29] (MODE) (LIST)

MODE [5]

$2, 7, 4 \rightarrow L1$       [3] [DATA] [2] [DATA] [7] [DATA] [4] [DATA]

$-3, -1, -4 \rightarrow L2$       [3] [DATA] [+/-] [3] [DATA] [+/-] [1] [DATA] [+/-] [4] [DATA]

$L1+L2 = \{-1 \ 6 \ 0\}$       [ON/C] [MATH] [0] [0] [0] [+] [MATH] [0] [1] [1] [=]

$\text{sortA } L1 = \{2 \ 4 \ 7\}$       [ON/C] [MATH] [3] [0] [MATH] [0] [0] [0] [=]

$\text{sortD } L1 = \{7 \ 4 \ 2\}$       [ON/C] [MATH] [3] [1] [MATH] [0] [0] [0] [=]

$\text{dim}(L1, 5) = \{2 \ 7 \ 4 \ 0 \ 0\}$       [ON/C] [MATH] [3] [2] [MATH] [0] [0] [0] [2ndF] [→] [5] [)] [=]

$\text{fill}(5, 5) = \{5 \ 5 \ 5 \ 5 \ 5\}$       [ON/C] [MATH] [3] [3] [5] [2ndF] [→] [5] [)] [=]

$\text{cumul } L1 = \{2 \ 9 \ 13\}$       [ON/C] [MATH] [3] [4] [MATH] [0] [0] [0] [=]

$\text{df\_list } L1 = \{5 \ -3\}$       [ON/C] [MATH] [3] [5] [MATH] [0] [0] [0] [=]

$\text{aug}(L1, L2) = \{2 \ 7 \ 4 \ -3 \ -1 \ -4\}$       [ON/C] [MATH] [3] [6] [MATH] [0] [0] [0] [2ndF] [→] [MATH] [0] [1] [)] [=]

$\text{min } L1 = 2$       [ON/C] [MATH] [4] [0] [MATH] [0] [0] [0] [=]

$\text{max } L1 = 7$       [ON/C] [MATH] [4] [1] [MATH] [0] [0] [0] [=]

$\text{mean } L1 = 4.333333333$       [ON/C] [MATH] [4] [2] [MATH] [0] [0] [0] [=]

$\text{med } L1 = 4$       [ON/C] [MATH] [4] [3] [MATH] [0] [0] [0] [=]

$\text{sum } L1 = 13$       [ON/C] [MATH] [4] [4] [MATH] [0] [0] [0] [=]

$\text{prod } L1 = 56$       [ON/C] [MATH] [4] [5] [MATH] [0] [0] [0] [=]

stdDv L1 = 2.516611478      [ON/C] [MATH] [4] [6] [MATH] [0] [0] [0] [=]

vari L1 = 6.333333333      [ON/C] [MATH] [4] [7] [MATH] [0] [0] [0] [=]

$\text{o\_prod}(L1, L2) = \{-24 \ -4 \ 19\}$       [ON/C] [MATH] [4] [8] [MATH] [0] [0] [0] [2ndF] [→] [MATH] [0] [1] [)] [=]

$\text{i\_prod}(L1, L2) = -29$       [ON/C] [MATH] [4] [9] [MATH] [0] [0] [0] [2ndF] [→] [MATH] [0] [1] [)] [=]

abs L2 = 5.099019514      [ON/C] [MATH] [4] [A] [MATH] [0] [1] [0] [=]

list → matA matA:  $\begin{bmatrix} 2 & -3 \\ 7 & -1 \\ 4 & -4 \end{bmatrix}$       [ON/C] [MATH] [6]

[30]

Function Funktion Fonction Función Função Funzioni Functie Függvény Funkce Funktion Funkcio Функция Funktion ฟังก์ชัน الدالة الطاقة الديناميكية 函数 Fungsi Fungsi Hàm số	Dynamic range zulässiger Bereich Plage dynamique Rango dinámico Gama dinâmica Campi dinamici Reken capaciteit Megengedett számítási tartomány Dynamický rozsah Definitionsområde Dynaaminen ala Динамический диапазон Dynamikområde พื้นที่ในการคำนวณ الطاقات الديناميكية 取值范围 Julat dinamik Kisaran dinamis Giới hạn Động
$\sin x, \cos x, \tan x$	DEG: $ x  < 10^{10}$ ( $\tan x :  x  \neq 90 (2n-1)^\circ$ ) RAD: $ x  < \frac{\pi}{180} \times 10^{10}$ ( $\tan x :  x  \neq \frac{\pi}{2} (2n-1)^\circ$ ) GRAD: $ x  < \frac{10}{9} \times 10^{10}$ ( $\tan x :  x  \neq 100 (2n-1)^\circ$ )
$\sin^{-1}x, \cos^{-1}x$	$ x  \leq 1$
$\tan^{-1}x, \sqrt[3]{x}$	$ x  < 10^{100}$
$\ln x, \log x$	$10^{-99} \leq x < 10^{100}$
$y^x$	• $y > 0: -10^{100} < x \log y < 100$ • $y = 0: 0 < x < 10^{100}$ • $y < 0: x = n$ ( $0 <  x  < 1: \frac{1}{x} = 2n-1, x \neq 0$ )*, $-10^{100} < x \log  y  < 100$
$x\sqrt{y}$	• $y > 0: -10^{100} < \frac{1}{x} \log y < 100 (x \neq 0)$ • $y = 0: 0 < x < 10^{100}$ • $y < 0: x = 2n-1$ ( $0 <  x  < 1: \frac{1}{x} = n, x \neq 0$ )*, $-10^{100} < \frac{1}{x} \log  y  < 100$
$e^x$	$-10^{100} < x \leq 230.2585092$
$10^x$	$-10^{100} < x < 100$
$\sinh x, \cosh x, \tanh x$	$ x  \leq 230.2585092$
$\sinh^{-1}x$	$ x  < 10^{50}$
$\cosh^{-1}x$	$1 \leq x < 10^{50}$
$\tanh^{-1}x$	$ x  < 1$
$x^2$	$ x  < 10^{50}$
$x^3$	$ x  < 2.15443469 \times 10^{33}$
$\sqrt{x}$	$0 \leq x < 10^{100}$
$x^{-1}$	$ x  < 10^{100} (x \neq 0)$
n!	$0 \leq n \leq 69^*$
nPr	$0 \leq r \leq n \leq 9999999999^*$ $\frac{n!}{(n-r)!} < 10^{100}$
nCr	$0 \leq r \leq n \leq 9999999999^*$ $0 \leq r \leq 69$ $\frac{n!}{(n-r)!} < 10^{100}$
↔DEG, D°M'S	$0^\circ 0' 0.00001'' \leq  x  < 10000^\circ$
$x, y \rightarrow r, \theta$	$\sqrt{x^2 + y^2} < 10^{100}$ $0 \leq r < 10^{100}$ DEG: $ \theta  < 10^{10}$ RAD: $ \theta  < \frac{\pi}{180} \times 10^{10}$ GRAD: $ \theta  < \frac{10}{9} \times 10^{10}$
r, θ → x, y	DEG → RAD, GRAD → DEG: $ x  < 10^{100}$ RAD → GRAD: $ x  < \frac{\pi}{2} \times 10^{98}$
DRG ▶	DEG → RAD, GRAD → DEG: $ x  < 10^{100}$ RAD → GRAD: $ x  < \frac{\pi}{2} \times 10^{98}$
(A+Bj)+(C+Dj)	$ A+C  < 10^{100},  B+D  < 10^{100}$
(A+Bj)-(C+Dj)	$ A-C  < 10^{100},  B-D  < 10^{100}$
(A+Bj)×(C+Dj)	$(AC-BD) < 10^{100}$ $(AD+BC) < 10^{100}$

(A+Bi)÷(C+Di)	$\frac{AC + BD}{C^2 + D^2} < 10^{100}$
	$\frac{BC - AD}{C^2 + D^2} < 10^{100}$ $C^2 + D^2 \neq 0$
→DEC	DEC : $ x  \leq 9999999999$
→BIN	BIN : $1000000000 \leq x \leq 1111111111$ $0 \leq x \leq 1111111111$
→PEN	PEN : $2222222223 \leq x \leq 4444444444$ $0 \leq x \leq 2222222222$
→OCT	OCT : $4000000000 \leq x \leq 7777777777$ $0 \leq x \leq 3777777777$
→HEX	HEX : $FDABF41C01 \leq x \leq FFFFFFFF$ $0 \leq x \leq 2540BE3FF$
AND	
OR	
XOR	
XNOR	
NOT	BIN : $1000000000 \leq x \leq 1111111111$ $0 \leq x \leq 1111111111$
	PEN : $2222222223 \leq x \leq 4444444444$ $0 \leq x \leq 2222222222$
	OCT : $4000000000 \leq x \leq 7777777777$ $0 \leq x \leq 3777777777$
	HEX : $FDABF41C01 \leq x \leq FFFFFFFF$ $0 \leq x \leq 2540BE3FE$
NEG	BIN : $1000000001 \leq x \leq 1111111111$ $0 \leq x \leq 1111111111$
	PEN : $2222222223 \leq x \leq 4444444444$ $0 \leq x \leq 2222222222$
	OCT : $4000000001 \leq x \leq 7777777777$ $0 \leq x \leq 3777777777$
	HEX : $FDABF41C01 \leq x \leq FFFFFFFF$ $0 \leq x \leq 2540BE3FF$

\* n, r: integer / ganze Zahlen / entier / entero / intero / intero / geheel getal / egész számok / celé číslo / heltal / kokonaisluku / целые / heltal / จำนวนเต็ม / عدد صحيح / 整数 / integer / bilangan bulat / số nguyên

**In Europe:**

This equipment complies with the requirements of Directive 89/336/EEC as amended by 93/68/EEC.

Dieses Gerät entspricht den Anforderungen der EG-Richtlinie 89/336/EWG mit Änderung 93/68/EWG.

Ce matériel répond aux exigences contenues dans la directive 89/336/CEE modifiée par la directive 93/68/CEE.

Dit apparaat voldoet aan de eisen van de richtlijn 89/336/EEG, gewijzigd door 93/68/EEG.

Dette udstyr overholder kravene i direktiv nr. 89/336/EEC med tillæg nr. 93/68/EEC.

Quest' apparecchio è conforme ai requisiti della direttiva 89/336/EEC come emendata dalla direttiva 93/68/EEC.

Η εγκατάσταση αυτή ανταποκρίνεται στις απαιτήσεις των οδηγιών της Ευρωπαϊκής Ένωσης 89/336/EOK, όπως ο κανονισμός αυτός συμπληρώθηκε από την οδηγία 93/68/EOK.

Este equipamento obedece às exigências da directiva 89/336/CEE na sua versão corrigida pela directiva 93/68/CEE.

Este aparato satisface las exigencias de la Directiva 89/336/CEE modificada por medio de la 93/68/CEE.

Denna utrustning uppfyller kraven enligt riktlinjen 89/336/EEC så som kompletteras av 93/68/EEC.

Dette produktet oppfyller betingelsene i direktivet 89/336/EEC i endringen 93/68/EEC.

Tämä laite täyttää direktiivin 89/336/EEC vaatimukset, jota on muutettu direktiivillä 93/68/EEC.

Данное устройство соответствует требованиям директивы 89/336/EEC с учетом поправок 93/68/EEC.

Ez a készülék megfelel a 89/336/EGK sz. EK-irányelvben és annak 93/68/EGK sz. módosításában foglalt követelményeknek.

Tento přístroj vyhovuje požadavkům směrnice 89/336/EEC v platném znění 93/68/EEC.

Nur für Deutschland/For Germany only:

**Umweltschutz**  
Das Gerät wird durch eine Batterie mit Strom versorgt. Um die Batterie sicher und umweltschonend zu entsorgen, beachten Sie bitte folgende Punkte:

- Bringen Sie die leere Batterie zu Ihrer örtlichen Mülldeponie, zum Händler oder zum Kundenservice-Zentrum zur Wiederverwertung.
- Werfen Sie die leere Batterie niemals ins Feuer, ins Wasser oder in den Hausmüll.

Seulement pour la France/For France only:

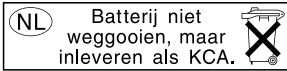
**Protection de l'environnement**  
L'appareil est alimenté par pile. Afin de protéger l'environnement, nous vous recommandons:

- d'apporter la pile usagée ou à votre revendeur ou au service après-vente, pour recyclage.
- de ne pas jeter la pile usagée dans une source de chaleur, dans l'eau ou dans un vide-ordures.

**Miljöskydd**  
Denna produkt drivs av batteri. Vid batteribruke skall följande iakttas:

- Det förbrukade batteriet skall inlämnas till er lokala handlare eller till kommunal miljöstation för återinnsamling.
- Kasta ej batteriet i vattnet eller i hushållssoporna. Batteriet får ej heller utsättas för öppen eld.

OPMERKING: ALLEEN VOOR NEDERLAND/  
NOTE: FOR NETHERLANDS ONLY



- Physical Constants and Metric Conversions are shown in the tables.
- Physikalischen Konstanten und metrische Umrechnungen sind in der Tabelle aufgelistet.
- Les constants physiques et les conversions des unités sont indiquées sur les tableaux.
- Las constantes físicas y conversiones métricas son mostradas en las tablas.
- Constantes Físicas e Conversões Métricas estão mostradas nas tabelas.
- La constanti fisiche e le conversioni delle unità di misura vengono mostrate nella tabella.
- De natuurconstanten en metrische omrekeningen staan in de tabellen hiernaast.
- A fizikai konstansok és a metrikus átváltások a táblázatokban található.
- Fyzikální konstanty a převody do metrické soustavy jsou uvedeny v tabulce.
- Fysikaliska konstanter och metriska omvandlingar visas i tabellerna.
- Fysikaaliset vakiot ja metrimuunnokset näkyvät taulukoista.
- В таблицах показаны физические константы и метрические преобразования.
- Fysiske konstanter og metriske omskrivninger vises i tabellen.
- ค่าคงที่ทางฟิสิกส์และการแปลงหน่วยเมตริกแสดงไว้ในตาราง
- الثوابت الفيزيائية والجداول المترية مبينة في الجداول.
- 关于物理常数和公制转换的问题请参见表中所示内容。
- Pemalar Fizik dan Pertukaran Metrik ditunjukkan di dalam jadual.
- Konstanta Fisika dan Konversi Metrik diperlihatkan di dalam tabel.
- Các Hằng số Vật lý và các Phép biến đổi Hệ mét được thể hiện trong các bảng.

**PHYSICAL CONSTANTS**

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No. SYMBOL UNIT	No. SYMBOL UNIT	No. SYMBOL UNIT
01 - $c, c_0$ m s <sup>-1</sup>	19 - $\mu_B$ J T <sup>-1</sup>	37 - $eV$ J
02 - $G$ m <sup>3</sup> kg <sup>-1</sup> s <sup>-2</sup>	20 - $\mu_e$ J T <sup>-1</sup>	38 - $t$ K
03 - $g_n$ m s <sup>-2</sup>	21 - $\mu_N$ J T <sup>-1</sup>	39 - $AU$ m
04 - $m_e$ kg	22 - $\mu_p$ J T <sup>-1</sup>	40 - $pc$ m
05 - $m_p$ kg	23 - $\mu_n$ J T <sup>-1</sup>	41 - $M(^12C)$ kg mol <sup>-1</sup>
06 - $m_n$ kg	24 - $\mu_m$ J T <sup>-1</sup>	42 - $\hbar$ J s
07 - $m_\mu$ kg	25 - $\lambda_c$ m	43 - $E_h$ J
08 - $lu$ kg	26 - $\lambda_c, p$ m	44 - $G_0$ s
09 - $e$ C	27 - $\sigma$ W m <sup>2</sup> K <sup>-4</sup>	45 - $\alpha^{-1}$
10 - $h$ J s	28 - $N_A, L$ mol <sup>-1</sup>	46 - $m_p/m_e$
11 - $k$ J K <sup>-1</sup>	29 - $V_m$ m <sup>3</sup> mol <sup>-1</sup>	47 - $M_H$ kg mol <sup>-1</sup>
12 - $\mu_0$ N A <sup>-2</sup>	30 - $R$ J mol <sup>-1</sup> K <sup>-1</sup>	48 - $\lambda_c, n$ m
13 - $E_0$ F m <sup>-1</sup>	31 - $F$ C mol <sup>-1</sup>	49 - $c_1$ W m <sup>2</sup>
14 - $r_e$ m	32 - $R_K$ Ohm	50 - $c_2$ m K
15 - $\alpha$	33 - $-e/m_e$ C kg <sup>-1</sup>	51 - $Z_0$ $\Omega$
16 - $a_0$ m	34 - $h/2m_e$ m <sup>2</sup> s <sup>-1</sup>	52 - Pa
17 - $R_\infty$ m <sup>-1</sup>	35 - $\gamma_p$ s <sup>-1</sup> T <sup>-1</sup>	
18 - $\Phi_0$ Wb	36 - $K_J$ Hz V <sup>-1</sup>	

**METRIC CONVERSIONS**

x (2ndF) (CONV) 1 — 44

No. UNIT	No. UNIT	No. UNIT
1 in→cm	16 kg→lb	31 J→calIT
2 cm→in	17 °F→°C	32 calIT→J
3 ft→m	18 °C→°F	33 hp→W
4 m→ft	19 gal (US)→ℓ	34 W→hp
5 yd→m	20 ℓ→gal (US)	35 ps→W
6 m→yd	21 gal (UK)→ℓ	36 W→ps
7 mile→km	22 ℓ→gal (UK)	37 kgf/cm <sup>2</sup> →Pa
8 km→mile	23 fl oz (US)→mℓ	38 Pa→kgf/cm <sup>2</sup>
9 n mile→m	24 mℓ→fl oz (US)	39 atm→Pa
10 m→n mile	25 fl oz (UK)→mℓ	40 Pa→atm
11 acre→m <sup>2</sup>	26 mℓ→fl oz (UK)	41 mmHg→Pa
12 m <sup>2</sup> →acre	27 J→cal	42 Pa→mmHg
13 oz→g	28 cal→J	43 kgf·m→J
14 g→oz	29 J→cal15	44 J→kgf·m
15 lb→kg	30 cal15→J	